Voice Processing Initiative —Not Just Talk

BY DAN VAN ATTA

Now hear this. When Karen Varnas, Gerald Hines and Joe Timko talk about the vast potential for voice processing technologies, AT&T listens. And if the cross-business unit steering committee co-chaired by this threesome has its way, many more AT&T products and services will soon be "hearing" spoken words, as well.

This 15-member, high-level steering committee is charged with implementing the goals of a Voice and Audio Processing Strategic Initiative and the underlying core platforms. The initiative is a collaborative R&D and business unit effort to accelerate the development of new products and services that make use of voice processing and related audio technologies.

The Operations Committee identified Chief Financial Officer Alex Mandl as the "champion" for this strategic initiative. Global Business Communications Systems President Jerre Stead, who represents the Communications Products Group, is the lead business unit president for the cross-BU team, which also includes Merrill Tutton of Communications Services Group, Dan Carroll of Network Systems Group, and Alok Mohan of NCR.

If the team achieves its primary goal, the initiative could become a model for other cross-business unit teaming efforts.

Leveraging Technology

"This strategic initiative calls for a collaborative teaming effort across business units," Stead says, "to leverage our competencies and bring new products and services with easy-to-use interfaces to market quickly."

In addition to Communications Products Group Technical Officer (GTO) Timko, other Bell Labs representatives on the committee include Communications Services GTO John Davis and Vice Presidents Arno Penzias, research, and Karl Martersteck, architecture.

"Our fundamental mission is to look at the evolution of voice and audio processing, and work collaboratively among business units to leverage our technology and bring new products to market faster," says Timko.

If the team achieves its primary goal — harnessing core competencies to identify and develop a wealth of core products, each applicable for use in a broad range of other products or services — Timko says the initiative could become a model for other cross-business unit teaming efforts.

"Voice processing is one of a number of strategic core platforms for AT&T," Timko adds. Other strategic initiatives include wireless, video, data, scalable microprocessor, and messaging. "These strategic initiatives will lead to many new products and services for our business units, and will create some new businesses for AT&T."

Signal Processing Research Department Head Nikil Jayant says one example of a non-traditional technology that holds potential is the compression of CD-grade audio signals. "This capability is central to digital audio broadcasting and digital sound for advanced television," states Jayant. "AT&T has a strong technical leadership position in audio compression. If harnessed in a timely fashion, this can give the corporation major new opportunities in consumer electronics."

New products not taken on by existing business units may be developed by the AT&T Venture Corp., suggests Timko, or by means of business alliances with other companies.

The two business unit co-chairs on the steering committee, Karen Varnas and Gerald Hines, agree that much can be gained by making full use of technical expertise in areas — like speech and voice processing — that have applications in many different markets.

Best Possible R&D

"We're moving ahead with automated systems that take advantage of voice processing technology," comments Hines, general manager for AT&T Card/Operator Services in the Consumer Communications Services business unit. "But we want to make sure we have the best possible R&D to build upon. In core areas, like voice processing, collaboration in technical development should interest every business unit in AT&T."

Varnas, who is Voice Processing Markets vice president in the Global Business Communications Systems business unit, says speech processing is a technology that "can give AT&T significantly more success in the market. By using speech as a means of input, rather than keyboards or touch-tone pads, we can transform the way people use existing devices to communicate."

In addition to new consumer products, Varnas says voice processing has numerous potential network and business applications — like using speech recognition 'voice prints" for security purposes.

Core Product Architecture Department Head Chester Anderson, together with Supervisor Dave Basore, supported by Director Randy Pile, are working full-time in support of the steering committee's activities. "We are implementing a new management process to enhance our ability to advance the core competencies, speed technology transfer, and build core products in voice technologies," says Anderson.

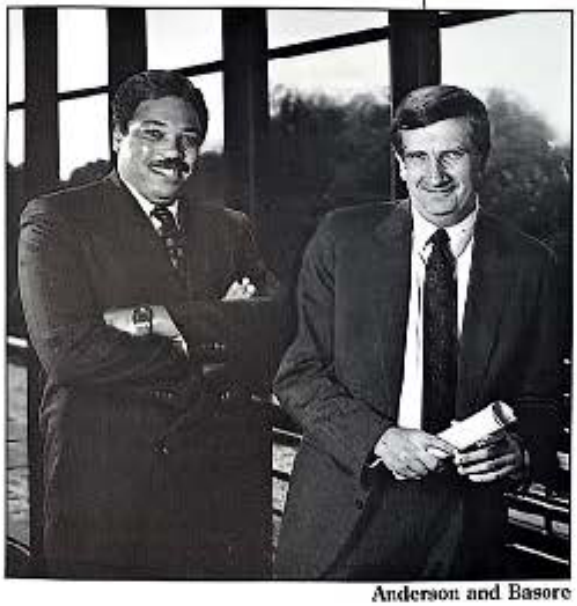
"We now have identified about 700 people across AT&T who are using this technology," Anderson notes. "We want to develop a sense of technical community in voice processing, in areas where people have common ties. We need to better communicate ideas and coordinate common activities among business units."

Five Teams

Basore adds that at least five cross-business unit teams have already been formed to pursue core product possibilities using voice processing technologies. Among these are:

- A Global Business Communications Systems-led effort to build an "open" architecture system for the Conversant® product. This will allow the product's components to be used or accessed individually.
- Federal Systems' work on a digital-signal-processor (DSP)-based platform to provide the computing power needed to support increasingly complex voice and audio processing algorithms.
- A joint effort by Consumer Products and Microelectronics business unit teams to develop a low-cost DSP chip that can be used to provide higher quality sound in speakerphones. It might also be used in speech dialers on telephones, or in modules, on televisions or computers, which respond to spoken commands.

"Another team is working on a nationwide collection of speech data which can support various services," Basore says. "And yet another project team is looking at a range of full-duplex, hands-free communications features. Along with new and improved devices, this can lead to a whole group of sub-components that may have applications in both consumer and business markets." ■



Anderson and Basore